Amendments to the Claims

1. (Currently amended) An isolated ~~or recombinant~~ nucleic acid encoding a polypeptide ~~comprising a nucleic acid sequence~~ having at least 95% sequence identity to SEQ ID NO:2~~SEQ ID NO:1, wherein the isolated or recombinant nucleic acid encodes a polypeptide including therein at least one of: (1) a domain having the function of the BIR1 domain and (2) a domain having the function of the RING domain, the polypeptide inhibiting the activity of a caspase~~.

2. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 1, wherein the ~~nucleic acid encodes a~~ polypeptide is capable of inhibiting apoptosis in insect cells.

3. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 1, wherein the ~~nucleic acid encodes a~~ polypeptide is capable of inhibiting apoptosis in *Spodoptera frugipera* or *Bombyx mori* cells.

4. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 1, wherein the ~~nucleic acid encodes a~~ polypeptide is capable of inhibiting apoptosis in mammalian cells.

5. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 1, wherein the ~~nucleic acid encodes a~~ polypeptide is capable of inhibiting apoptosis in plant cells.

6. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 1, wherein the ~~nucleic acid encodes a~~ polypeptide is capable of inhibiting caspase 9.

7. (Currently amended) An isolated ~~or recombinant~~ nucleic acid encoding a polypeptide ~~having a sequence as set forth in~~ comprising SEQ ID NO:2.

8. (Currently amended) An isolated ~~or recombinant~~ nucleic acid comprising ~~a nucleic acid sequence as set forth in~~ SEQ ID NO:1.

9. (Currently amended) An isolated expression cassette comprising at least one nucleic acid operably linked to a promoter, wherein the nucleic acid encodes a polypeptide~~comprises a~~

~~sequence~~ having a 95% sequence identity to SEQ ID NO:2~~SEQ ID NO:1, wherein the nucleic acid encodes a polypeptide including therein at least one of: (1) a domain having the function of the BIR1 domain and (2) a domain having the function of the RING domain, the polypeptide inhibiting the activity of a caspase~~.

10. (Currently amended) The isolated expression of cassette of claim 9, wherein the promoter is a constitutive or inducible promoter.

11. (Currently amended) The isolated expression cassette of claim 9, wherein the promoter is a developmentally regulated or a tissue specific promoter.

12. (Currently amended) The isolated expression cassette of claim 9, wherein the ~~nucleic acid encodes a~~ polypeptide ~~having a sequence as set forth in~~comprises SEQ ID NO:2.

13. (Currently amended) An isolated ~~A transformed~~ cell ~~comprising~~ transformed with a nucleic acid sequence encoding a polypeptide having at least 95% sequence identity to SEQ ID NO:2~~SEQ ID NO:1, wherein the nucleic acid encodes a polypeptide including therein at least one of: (1) a domain having the function of the BIR1 domain and (2) a domain having the function of the RING domain, the polypeptide inhibiting the activity of a caspase~~.

14. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the cell is a mammalian cell.

15. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the cell is an insect cell.

16. (Currently amended) The isolated ~~transformed~~ cell of claim 15, wherein the insect cell is a *Spodoptera frugiperda* cell or a *Bombyx mori* cell.

17. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the cell is a plant cell.

18. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the cell is a yeast cell.

19. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the ~~nucleic acid encodes a~~ polypeptide ~~having a sequence as set forth in~~comprises SEQ ID NO:2.

20-43 (Cancelled).

44. (Currently amended) An array comprising a nucleic acid encoding a polypeptide ~~comprising a sequence~~ having at least 95% identity to SEQ ID NO:2~~SEQ ID NO:1, wherein the nucleic acid encodes a polypeptide including therein at least one of: (1) a domain having the function of the BIR1 domain and (2) a domain having the function of the RING domain, the polypeptide inhibiting the activity of a caspase~~.

45. (Cancelled).

46. (Currently amended) A method of making a ~~recombinant~~ polypeptide comprising expressing in an isolated transformed cell a nucleic acid encoding a polypeptide having at least 95% sequence identity to SEQ ID NO:2~~SEQ ID NO:1, wherein the nucleic acid encodes a polypeptide including therein at least one of: (1) a domain having the function of the BIR1 domain and (2) a domain having the function of the RING domain, the polypeptide inhibiting the activity of a caspase~~.

47-69 (Cancelled).

70. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 1, wherein the ~~nucleic acid encodes a~~ polypeptide includes~~including~~ therein two BIR domains ~~both a domain having the function of the BIR1 domain~~ and a ~~domain having the function of the~~ RING domain.

71. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 70 wherein the BIR domains are a BIR1 domain and a~~nucleic acid encodes a polypeptide further including therein a domain having the function of the~~ BIR2 domain.

72. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 71 wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2 or a sequence related to residues 74 to 140 of SEQ ID NO:2 by one or more conservative amino acid substitutions, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2 or a sequence related to residues 182 to 249 of SEQ ID NO:2 by one or more conservative amino acid substitutions, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2 or a sequence related to residues 298 to 314 of SEQ ID NO:2 by one or more conservative amino acid substitutions.

73. (Currently amended) The isolated ~~or recombinant~~ nucleic acid of claim 72 wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2.

74. (Currently amended) The isolated expression cassette of claim 9, wherein the nucleic acid comprises ~~a nucleic acid sequence as set forth in~~ SEQ ID NO:1.

75. (Currently amended) The isolated expression cassette of claim 9, wherein the ~~nucleic acid encodes a~~ polypeptide includes~~including~~ therein two BIR domains~~both a domain having the function of the BIR1 domain~~ and a ~~domain having the function of the~~ RING domain.

76. (Currently amended) The isolated expression cassette of claim 75, wherein the BIR domains are a BIR1 and a~~nucleic acid encodes a polypeptide further including therein a domain having the function of the~~ BIR2 domain.

77. (Currently amended) The isolated expression cassette of claim 76, wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence

of residues 74 to 140 of SEQ ID NO:2 or a sequence related to residues 74 to 140 of SEQ ID NO:2 by one or more conservative amino acid substitutions, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2 or a sequence related to residues 182 to 249 of SEQ ID NO:2 by one or more conservative amino acid substitutions, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2 or a sequence related to residues 298 to 314 of SEQ ID NO:2 by one or more conservative amino acid substitutions.

78. (Currently amended) The isolated expression cassette of claim 77, wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2.

79. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the nucleic acid comprises ~~a nucleic acid sequence as set forth in~~ SEQ ID NO:1.

80. (Currently amended) The isolated ~~transformed~~ cell of claim 13, wherein the ~~nucleic acid encodes a~~ polypeptide includes~~including~~ therein two BIR domains~~both a domain having the function of the BIR1 domain~~ and a ~~domain having the function of the~~ RING domain.

81. (Currently amended) The isolated ~~transformed~~ cell of claim 80, wherein the BIR domains are a BIR1 domain and a~~nucleic acid encodes a polypeptide further including therein a domain having the function of the~~ BIR2 domain.

82. (Currently amended) The isolated ~~transformed~~ cell of claim 81, wherein the ~~domain having the function of~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID No:2 or a sequence related to residues 74 to 140 of SEQ ID NO:2 by one or more conservative amino acid substitutions, the ~~domain having the function of~~ BIR2

domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2 or a sequence related to residues 189 to 249 SEQ ID NO:2 by one or more conservative amino acid substitutions, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2 or a sequence related to residues 298 to 314 of SEQ ID NO:2 by one or more conservative amino acid substitutions.

83. (Currently amended) The isolated ~~transformed~~ cell of claim 82, wherein the ~~domain having the function of~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2, the ~~domain having the function of~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2, and the ~~domain having the function of the~~ RING domain encoded by the nucleic acid has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2.

84. (Currently amended) The array of claim 44, wherein the polypeptide~~nucleic acid~~ comprises ~~a nucleic acid sequence as set forth in~~ SEQ ID NO:2.

85. (Currently amended) The array of claim 84, wherein the nucleic acid comprises ~~a nucleic acid sequence as set forth in~~ SEQ ID NO:1.

86. (Currently amended) The array of claim 44, wherein the ~~nucleic acid encodes a~~ polypeptide includes~~including~~ therein two BIR domains ~~both a domain having the function of BIR1 domain~~ and a ~~domain having the function of the~~ RING domain.

87. (Currently amended) The array of claim 86, wherein the BIR domains are a BIR1 domain and a~~nucleic acid encodes a polypeptide further including therein~~ a ~~domain having the function of the~~ BIR2 domain.

88. (Currently amended) The array of claim 87, wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence residues 74 to 140 of SEQ ID NO:2 or a sequence related to residues 74 to 140 of SEQ ID NO:2 by one or more

conservative amino acid substitutions, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2 or a sequence related to residues 182 to 249 of SEQ ID NO:2 by one or more conservative amino acid substitutions, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2 or a sequence related to residues 298 to 314 of SEQ ID NO:2 by one or more conservative amino acid substitutions.

89. (Currently amended) The array of claim 88, wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2.

90. (Currently amended) The method of ~~making a recombinant polypeptide of~~ claim 46, wherein the ~~nucleic acid encodes a~~ polypeptide ~~having a sequence a set forth in~~comprises SEQ ID NO:2.

91. (Currently amended) The method of ~~making a recombinant polypeptide of~~ claim 90, wherein the nucleic acid comprises ~~a nucleic acid sequence as set forth in~~ SEQ ID NO:1.

92. (Currently amended) The method of ~~making a recombinant polypeptide of~~ claim 46, wherein the ~~nucleic acid encodes a~~ polypeptide includes~~including~~ therein two BIR domains~~both a domain having the function of the BIR1 domain~~ and a ~~domain having the function of the~~ RING domain.

93. (Currently amended) The method of ~~making a recombinant polypeptide of~~ claim 92, wherein the BIR domains are a BIR1 domain and a~~nucleic acid encodes a polypeptide further including therein a domain having the function of the~~ BIR2 domain.

94. (Currently amended) The method of ~~making a recombinant polypeptide of~~ claim 93, wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2 or a sequence related to residues 74 to 140 of SEQ ID NO:2 by one or more conservative amino acid substitutions, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acids~~ has amino acid sequence of residues 182 to 249 of SEQ ID NO:2 or a sequence related to residues 182 to 249 of SEQ ID NO:2 by one or more conservative amino acid substitutions, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of resides 298 to 314 of SEQ ID NO:2 or a sequence related to residues 298 to 314 of SEQ ID NO:2 by one or more conservative amino acid substitutions.

95. (Currently amended) The method of ~~making a recombinant polypeptide of~~ claim 94, wherein the ~~domain having the function of the~~ BIR1 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 74 to 140 of SEQ ID NO:2, the ~~domain having the function of the~~ BIR2 domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 182 to 249 of SEQ ID NO:2, and the ~~domain having the function of the~~ RING domain ~~encoded by the nucleic acid~~ has the amino acid sequence of residues 298 to 314 of SEQ ID NO:2

96. (Currently amended) An isolated expression cassette comprising at least one nucleic acid operably linked to a promoter, wherein the nucleic acid encodes a polypeptide ~~having a sequence as set forth in~~comprising SEQ ID NO:2.

97. (New) The isolated nucleic acid of claim 1, wherein the polypeptide inhibits the activity of a caspase.

98. (New) The isolated nucleic acid of claim 97, wherein the polypeptide inhibits the activity of caspase-9.

99. (New) The isolated expression cassette of claim 9, wherein the polypeptide inhibits the activity of a caspase.

100. (New) The isolated expression cassette of claim 99, wherein the polypeptide inhibits the activity of caspase-9.

101. (New) The isolated cell of claim 13, wherein the polypeptide inhibits the activity of a caspase.

102. (New) The isolated cell of claim 101, wherein the polypeptide inhibits the activity of caspase-9.

103. (New) The array of claim 44, wherein the polypeptide inhibits the activity of a caspase.

104. (New) The array of claim 103, wherein the polypeptide inhibits the activity of caspase-9.

105. (New) The method of claim 46, wherein the polypeptide inhibits the activity of a caspase.

106. (New) The method of claim 105, wherein the polypeptide inhibits the activity of caspase-9.